

IN THE CLAIMS

Claims 1-5, 7-18, and 20-32 are pending. A current listing of the claims is:

1. (Amended) A grinding machine, comprising:
 - a. a surface following frame to be moved along a surface to be ground;
 - b. an hydraulic grinding assembly mounted to said frame;
 - c. a mechanism causing said grinding assembly to be raised and lowered relative to said frame in a predetermined pattern; and,
 - d. a displacement wheel mounted to said frame and mechanically linked to said mechanism, wherein rotation of said displacement wheel actuates said raising and lowering mechanism.
2. (Original) The grinding machine of claim 1 wherein said predetermined pattern is actuated by the advancement of said frame.
3. (Original) The grinding machine of claim 2, wherein said grinding assembly is pivotally mounted to said frame.
4. (Amended) The grinding machine of claim 2, wherein said mechanism for raising and lowering said grinding assembly comprises at least one hydraulic piston~~vertical slide~~.
5. (Original) The grinding machine of claim 2, wherein said mechanism for raising and lowering said grinding assembly comprises a pivot arm.
6. (Cancelled).

7. (Amended) The grinding machine of claim 61, wherein said raising and lowering mechanism is hydraulically assisted.
8. (Original) The grinding machine of claim 7, comprising an hydraulic control valve mounted on said grinding assembly.
9. (Amended) The grinding machine of claim 61, wherein said displacement wheel is mounted forward of said frame.
10. (Amended) The grinding machine of claim 61, wherein said displacement wheel supports said frame over the surface to be ground.
11. (Amended) The grinding machine of claim 7, comprising a bell crank pivotally mounted to said ~~trolley frame~~ and an activation ~~link-rod linking~~ rod link between said bell crank and said displacement wheel, wherein said rod link is oriented to advance and retract in association with rotation of said displacement wheel, wherein advancement and retraction of said activation rod link causes said bell crank to actuate said raising and lowering mechanism.
12. (Amended) The grinding machine of claim 11, wherein said activation rod link is eccentrically mounted to said displacement gauge wheel.
13. (Original) The grinding machine of claim 7, wherein said raising and lowering mechanism comprises at least one hydraulic piston mounted between said frame and said grinding assembly.
14. (Amended) The grinding machine of claim 13, comprising an hydraulic valve actuated by said gauge-displacement wheel to extend and retract said at least one hydraulic piston.

15. (Original) The grinding machine of claim 2, wherein said frame comprises ground support elements.
16. (Original) The grinding machine of claim 15, wherein said ground support elements are selected from a group consisting of wheels, rollers and skids.
17. (Original) The grinding machine of claim 2, wherein said frame is mounted to a host machine.
18. (Amended) A grinding machine, comprising:
- a. a surface following portion to be moved at a uniform height along a surface to be ground having front and rear ground support elements;
 - b. an hydraulic grinding assembly mounted to said surface following portion;
 - c. a gauge wheel associated with said surface following portion and in contact with the surface to be ground;
 - d. a rotating pattern wheel associated with said surface following portion, wherein said pattern wheel is axially offset from and driven by said gauge wheel and,
 - e. at least one hydraulic piston linked to said pattern wheel-mechanism to hydraulically vertically raise and lower said grinding assembly relative to said surface following portion and said front and rear ground support elements to grind depressions in the surface in correspondence with the rotation of said gauge wheel.
19. (Cancelled).

20. (Amended) The grinding machine of claim ~~19~~18, wherein said pattern wheel is driven by a sprocket chain driven by said gauge wheel.
21. (Amended) The grinding machine of claim ~~19~~18, comprising a bell crank mounted to said surface following portion, with one bell crank arm linked to said pattern wheel, wherein rotation of said pattern wheel causes said bell crank to rotate, and wherein rotation of said bell crank actuates said raising and lowering mechanism.
22. (Original) The grinding machine of claim 21, wherein said one bell crank arm is linked to said pattern wheel via an actuation rod.
23. (Original) The grinding machine of claim 21, wherein said bell crank is biased to a position where said grinding assembly is raised, and wherein said pattern wheel is linked to said bell crank to periodically urge said bell crank to a position where said grinding assembly is lowered.
24. (Original) The grinding machine of claim 22, wherein a second bell crank arm is coupled to an hydraulic valve which operates an hydraulic cylinder to raise and lower said grinding assembly.
25. (Original) The grinding machine of claim 24, wherein the arms of said bell crank span an angle of approximately 85 degrees.
26. (Original) The grinding machine of claim 18, wherein said gauge wheel is spring biased to contact the ground.

27. (Amended) A method of grinding a series of depressions in a surface, comprising the steps of:

- a. providing an hydraulic grinding assembly mounted on a surface mounting portion having front and rear ground support elements;
- b. advancing a gauge wheel along the surface to be ground; and,
- c. raising and lowering said grinding assembly relative to said surface mounting portion and said front and rear ground support elements in correspondence with the rotation of the gauge wheel.

28. (Original) The method of claim 27, comprising hydraulically raising and lowering said grinding assembly.

29. (Amended) The method of claim ~~19~~27, comprising driving a pattern wheel offset from said gauge wheel.

30. (Amended) The method of claim ~~19~~27, comprising milling depressions by raising and lowering said grinding assembly.

31. (New) The grinding machine of claim 18, comprising an actuation rod linked to said hydraulic piston, and eccentrically linked to said pattern wheel.

32. (New) The grinding machine of claim 31, wherein said actuation rod is linked to a sliding member in a track defined on said pattern wheel.